# TP-T36



# 1. System Overview

The TP-T36 tethering system primarily consists of a reel-and-unroll winch, a tethering enclosure, integrated tethering cables, and an integrated ground power supply; it provides tethered UAVs with wired power supply and cable reel/unroll functionality; data transmission is a project-specific option. The reel-and-unroll winch mainly comprises a system enclosure, a main frame, a cable storage reel, and a control circuit.

## 1.1 Main Technical Specifications

| order number | project | technical parameter |
|---|---|---|
| 1 | System cabinet main dimensions | 768 mm × 615 mm × 692 mm (Length × Width × Height) |
| 2 | Single-cable length | 120m |
| 3 | weight | 95±3kg |
| 4 | Input voltage | AC380V |
| 5 | Maximum closing speed | ≤2 m/s |
| 6 | work pattern | Passive unwinding/active winding |
| 7 | Power supply output voltage | 1000–1500 VDC |
| 8 | Power supply output rated power | 36kW |
| 9 | Recommended airborne power supply rating | ≤36kW |

Nominal input: 380 VAC, 50 Hz. 400 VAC, 50 Hz grids are within the normal input range. Standard maximum rewind speed is ≤2 m/s; faster rewind requires a custom configuration. Continuous output current is limited to 25 A, subject to the 36 kW output power limit. Data transmission is a customer-specific configuration, not a standard feature of every unit.




## 1.2 User Instructions

### 1.2.1 Fixed Container Panel Instructions:

1）Main power circuit breaker: The main power switch for the entire system, including the main power supply for the tethered power box and the tethered winch box;

2）LCD Setting Button (SET): The output-voltage range is 1000–1500 VDC. Continuous output current must not exceed 25 A, and output power must not exceed 36 kW. Do not change protected settings yourself; contact TethPower for the approved project configuration. The display photograph illustrates the interface only, not operating-current limits.

3）LCD Information Panel (Measue)

- LCD Display Voltage (Voltage): Displays the current power supply output voltage value.
- LCD Current Value (Current): Displays the current power supply output current value.
- LCD Display Power Value (Power): Displays the current power output value.
- LCD Display Temperature (Temperature): Displays the current internal power supply temperature; if this temperature exceeds 65°C, the device should be used with a reduced rating.

4）LCD Information Panel (Set)

- LCD display voltage value (Voltage): Displays the tethered configuration output voltage value.
- LCD current value (Current): Displays the tethered configuration output current value.

5）LCD Help Button

You can configure a Chinese/English language switch; for detailed instructions, please consult the manufacturer's setup guide.

6）LCD power supply's "On" button: When pressed, the power supply unit outputs power according to the set voltage value; the rated current shall not exceed the set current.

7）LCD power off button (Off): Pressing this button turns off the power supply; no power output will be available.




## 1.3.2 Wiring Instructions

1）Connect the supplied power cable – either from the mains or from a generator – to the tethered box; one end of the aviation plug should be connected directly to the tethered box's aviation socket, while the other end can be connected directly to the mains or to a generator;



2) The high-voltage cable for the tethered payload terminates at an XT90 connector; connect this cable to the drone's onboard power supply (as shown in the figure below), and securely fasten the load-bearing hook (which will be subjected to force via its tether).



## 1.3.3 Operating Instructions

1) During operation, first set the torque adjustment knob to the lowest position, then close the power switch to power on the system; at this point, the display panel will light up;

2) When power is needed for the drone, press the LCD "On" button; the tethered box's cooling fan will then start operating, and the display will show the current output voltage, current, and power of the main cable supply.

3) When the drone is ready to take off, set the torque knob to the lowest setting or apply a slight torque (in windy conditions); then pull the cable out using the drone. During cable retraction, adjust the torque knob from low to high while simultaneously reducing the drone's descent speed; alternatively, set the torque to an appropriate level from the outset to maintain a constant cable tension throughout the operation. When deploying the cable, use the drone to pull the cable forcefully and maintain a hover position; during landing, the cable will automatically retract as it is under tension.

4) Upon completion of the task, first turn off the main power supply and press the LCD "Off" button to disconnect the high-voltage DC power; then perform the remaining cable retraction operation to prevent accidental electric shock; finally, turn off the main power switch and unplug the power cord.

# 6. Precautions

1）Before use, please level the device and place it on a flat surface to ensure a relatively balanced position;

2) Operators must wear insulating gloves to prevent accidental electric shock;

3) When adjusting the speed control knob, turn it slowly from the smallest position to the largest; do not abruptly set it to the maximum position;

4) After completing the charging or discharging process, coil the power cord neatly and store it inside the box; do not drag it across the floor.

5) During use, do not drag the tethered cable across the ground to prevent it from becoming frayed; also, check the ground for any stones or other sharp objects that could cut the cable.